

ORDINANCE NO. 14.02

AN ORDINANCE AMENDING CHAPTER 8, ARTICLES I, II,  
III AND IV OF THE MOUNTAIN VIEW CITY CODE  
RELATING TO THE ADOPTION OF THE 1997 UNIFORM  
BUILDING CODE AND OTHER VARIOUS UNIFORM CODES

WHEREAS, a local entity such as the City of Mountain View must adopt the Uniform Codes prior to November 1, 2002 if the local agency desires to maintain local control and allow for amendments to the Uniform Model Code or Codes in order to accommodate local requirements for local conditions; and

WHEREAS, the City of Mountain View has local conditions which require amendments to the Uniform Model Codes;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF MOUNTAIN VIEW DOES HEREBY ORDAIN AS FOLLOWS:

Section 1. Section 8.1 of Article I of Chapter 8 of the Mountain View City Code is amended as follows:

**"SEC. 8.1. Uniform Building Code adopted—Short title.**

The Uniform Building Code, 1997 edition, first printing, promulgated by the International Conference of Building Officials, 5360 South Workman Mill Road, Whittier, California, 90601, which regulates the erection, construction, enlargement, alteration, repair, moving, removal, conversion, demolition, occupancy, equipment, use, height, area and maintenance of buildings and other structures is adopted, including the following appendices: 15; 18; 29; 31, Division II; Division III; 33; and 34 and by this reference is made a part of this city code with the same force and effect as though set out herein in full. One copy of the Uniform Building Code is on file and open to public inspection in the building inspection office." (Ord. No. 1.79, 1/8/79; Ord. No. 7.85, 4/30/85; Ord. No. 34.86, 12/9/86; Ord. No. 1.87, 1/13/87; Ord No. 15.92, 6/9/92; Ord No. 22.95, 11/28/95; Ord. No. 7.99, 5/25/99.)

Section 2. Section 8.11 of Article I of Chapter 8 of the Mountain View City Code is amended as follows:

**"SEC. 8.11. Section 904.1.2 amended—Standards.**

Section 904.1.2 of the Uniform Building Code is amended to read as follows:

**'Section 904.1.3. Standards.**

Fire-extinguishing systems shall comply with the following, including the appendix sections of each standard: NFPA 11-1998, Foam Extinguishing Systems; NFPA 11A-1999, Medium- and High-Expansion Foam Systems; NFPA 12-1998, Carbon Dioxide Fire Extinguishing Systems; NFPA 12A-1997, Halon 1301 Systems; NFPA 2001-2000, Clean Agent Fire Extinguishing Systems; NFPA 13, 1999 Installation of Sprinkler Systems as amended; NFPA 13D-1999, Sprinklers Systems One- and Two-Family Dwellings as amended; NFPA 13R-1999, Sprinkler Systems, Residential Occupancies to Four Stories in Height as amended; NFPA 14-2000, Standpipe and Hose Systems as amended; NFPA 15-1996, Water Spray Fixed Systems; NFPA 16-1999, Foam-Water Sprinkler and Foam-Water Spray Systems; NFPA 17-1998, Dry Chemical Extinguishing Systems; NFPA 17A-1998, Wet Chemical Extinguishing Systems; NFPA 20-1999, Centrifugal Fire Pumps; NFPA 22-1998, Water Tanks for Private Fire

Protection; NFPA 24-1995, Private Fire Service Mains (except as noted in Section 904.1.2, Exception 2); NFPA 72-1999, National Fire Alarm Code."

Section 3. Section 8.12 of Article I of Chapter 8 of the Mountain View City Code is amended to read as follows:

**"SEC. 8.12. Section 904.1.3 amended—Modifications.**

Section 904.1.3 of Chapter 9 of the Uniform Building Code is amended to read as follows:

**'Section 904.1.3. Standards.**

When residential sprinkler systems as set forth in NFPA 13R-1999 are provided, exceptions to, or reductions in, code requirements based on the installation of an automatic fire-extinguishing system are not allowed."

Section 4. Section 8.19 of Article I of Chapter 8 of the Mountain View City Code is added to read:

**"SEC. 8.19. Section 2320.11.3 amended—Conventional Construction Provisions—Bracing.**

Section 2320.11.3 of the Uniform Building Code is amended to read as follows:

**'Section 2320.11.3. Bracing.**

Braced wall lines shall consist of braced wall panels which meet the requirements for location, type and amount of bracing specified in Table 23-IV-C-1 and are in line or offset from each other by not more than 4 feet (1,219 mm). Braced wall panels shall start at not more than 8 feet (2,438 mm) from each end of a braced wall line. All braced wall panels shall be clearly indicated on the plans. Construction of braced wall panels shall be by one of the following methods:

1. Nominal 1-inch by 4-inch (25 mm by 102 mm) continuous diagonal braces let into top and bottom plates and intervening studs, placed at an angle not more than 60 degrees or less than 45 degrees from the horizontal, and attached to the framing in conformance with Table 23-II-B-1.
2. Wood boards of 5/8-inch (16 mm) net minimum thickness applied diagonally on studs spaced not over 24 inches (610 mm) on center.
3. Wood structural panel sheathing with a thickness not less than 5/16 inch (7.9 mm) for 16-inch (406 mm) stud spacing and not less than 3/8 inch (9.5 mm) for 24-inch (610 mm) stud spacing in accordance with Tables 23-II-A-1 and 23-IV-D-1.
4. Fiberboard sheathing 4-foot by 8-foot (1,219 mm by 2,438 mm) panels not less than 1/2 inch (13 mm) thick applied vertically on studs spaced not over 16 inches (406 mm) on center when installed in accordance with Section 2315.6 and Table 23-II-J.
5. Particleboard wall sheathing panels when installed in accordance with Table 23-IV-D-2.
6. Portland cement plaster on studs 16 inches (406 mm) on center installed in accordance with Table 25-I. These standards can only be used in one-story structures of R3 and U1 occupancies.

7. Hardboard panel siding when installed in accordance with Section 2310.6 and Table 23-II-C.

Method 1 is not permitted in Seismic Zones 2B, 3 and 4. For cripple wall bracing, see Section 2320.11.5. For Methods 2, 3, 4, 6, 7 and 8, each braced panel must be at least 48 inches (1,219 mm) in length, covering three stud spaces where studs are spaced 16 inches (406 mm) apart and covering two stud spaces where studs are spaced 24 inches (610 mm) apart.

For Method 5, each braced wall panel must be at least 96 inches (2,438 mm) in length when applied to one face of a braced wall panel and 48 inches (1,219 mm) when applied to both faces.

All vertical joints of panel sheathing shall occur over studs. Horizontal joints shall occur over blocking equal in size to the studding except where waived by installation requirements for the specific sheathing materials.

Braced wall panel sole plates shall be nailed to the floor framing and top plates shall be connected to the framing above in accordance with Table 23-II-B-1. Sills shall be bolted to the foundation or slab in accordance with Section 1806.6. Where joists are perpendicular to braced wall lines above, blocking shall be provided under and in line with the braced wall panels."

**Finding:** Mountain View is located in Seismic Zone 4. Gypsum wallboard and exterior Portland cement plaster have performed poorly during recent California seismic events. The shear values for gypsum wallboard and Portland cement stucco contained in the code are based on monodirectional testing. It is appropriate to limit the use of these products until cycle loading testing are performed and evaluated.

Section 5. Section 8.20 of Article I of Chapter 8 of the Mountain View City Code is amended to read:

**"SEC. 8.20. Section 1629.4.2 amended—Seismic Zone 4 Near-Source Factor.**

Section 1629.4.2 of Chapter 16 of the Uniform Building Code is amended to read:

'In Seismic Zone 4, each site shall be assigned a near-source factor in accordance with Table 16-S and the seismic source type set forth in Table 16-U. The value of  $N_a$  used in determining  $C_a$  need not exceed 1.1 for structures complying with all the following conditions:

1. The soil profile type is  $S_A$ ,  $S_B$ ,  $S_C$  or  $S_D$ .
2.  $\rho = 1.0$ .
3. Except in single-story structures, Group R, Division 3 and Group U, Division 1 occupancies, moment-frame systems designated as part of the lateral-force-resisting system shall be special moment-resisting frames.
4. The provisions in Sections 9.6a and 9.6b of AISC-Seismic Part I shall not apply, except for columns in one-story buildings or columns at the top story of multi-story buildings.
5. None of the following structural irregularities is present: Type 1, 4 or 5 of Table 16-L, and Type 1 or 4 of Table 16-M."

**Findings:** The amendment set forth in this part is reasonably necessary because of the following local geological conditions.

1. The San Francisco-San Jose Bay Area region is densely populated and located in an area of high seismic activities as indicated by United States Geological Survey and California Division of Mines and Geology.
2. Recent earthquake activities, including the 1989 Loma Prieta and the 1994 Northridge earthquakes, have indicated the lack of adequate design and detailing as a contributing factor to damages that reduced the protection of the life-safety of building occupants.
3. Sections 9.6a and 9.6b of AISC-Seismic Part I exempts strong-column/weak-beam requirements under certain load conditions and configurations for steel special and Intermediate moment frames. 97 UBC Section 1629.4.2, Item 4, requires that structures located near fault shall comply with strong-column/weak-beam requirements. The revision reflects the same requirements as in 1997 AISC-Seismic. This is consistent with SEAOC seismology position.

Section 6. Section 8.21 of Article I of Chapter 8 of the Mountain View City Code is hereby deleted in its entirety, and a new Section 8.21 is added to read as follows:

**"SEC. 8.21. UBC Table 16-N shall read:**

TABLE 16-N—STRUCTURAL SYSTEMS<sup>1</sup>

BASIC STRUCTURAL SYSTEM <sup>2</sup>	LATERAL-FORCE-RESISTING SYSTEM DESCRIPTION	R	Ω	HEIGHT LIMIT FOR SEISMIC ZONES 3 AND 4 (feet)
				x 304.8 for mm
1. Bearing wall system	1. Light-framed walls with shear panels.			
	a. Wood structural panel walls for structures three stories or less.	5.5	2.8	65
	b. All other light-framed walls.	4.5	2.8	65
	2. Shear walls.			
	a. Concrete.	4.5	2.8	160
	b. Masonry.	4.5	2.8	160
	3. Light steel-framed bearing walls with tension-only bracing.	2.8	2.2	65
	4. Braced frames where bracing carries gravity load.			
	a. Steel.	4.4	2.2	160
	b. Concrete <sup>3</sup> .	2.8	2.2	- <sup>3</sup>
	c. Heavy timber.	2.8	2.2	65
2. Building frame system	1. Steel eccentrically braced frame (EBF).	7.0	2.8	240
	2. Light-framed walls with shear panels.			
	a. Wood structural panel walls for structures three stories or less.	6.5	2.8	65
	b. All other light-framed walls.	5.0	2.8	65
	3. Shear walls.			
	a. Concrete.	5.5	2.8	240
	b. Masonry.	5.5	2.8	160
	4. Ordinary braced frames.			
	a. Steel <sup>6</sup> .	5.6	2.2	35 <sup>6</sup>
	b. Concrete <sup>3</sup> .	5.6	2.2	
	c. Heavy timber.	5.6	2.2	65
3. Moment-resisting frame system	5. Special concentrically braced frames.			
	a. Steel.	6.4	2.2	240
	1. Special moment-resisting frame (SMRF).			
	a. Steel.	8.5	2.8	N. L.
	b. Concrete <sup>4</sup> .	8.5	2.8	N.L.
	2. Masonry moment-resisting wall frame (MMRWF).	6.5	2.8	160
	3. Intermediate moment-resisting frame (IMBF).			
	a. Steel <sup>6</sup> .	4.5	2.8	35 <sup>6</sup>
	b. Concrete <sup>5</sup> .	5.5	2.8	- <sup>3</sup>
	4. Ordinary moment-resisting frame (OMRF).			
	a. Steel <sup>6</sup> .	3.5	2.8	- <sup>6</sup>
	b. Concrete <sup>8</sup> .	3.5	2.8	- <sup>3</sup>
	5. Special truss moment frames of steel (STMF).	6.5	2.8	240

4. Dual systems	1. Shear walls.			
	a. Concrete with SMRF.	8.5	2.8	N.L.
	b. Concrete with steel OMRF (not permitted).	-	-	-
	c. Concrete with concrete IMRF <sup>5</sup> .	6.5	2.8	<sup>5</sup>
	d. Masonry with SMRF.	5.5	2.8	160
	e. Masonry with steel OMRF (not permitted).	-	-	-
	f. Masonry with concrete IMRF <sup>3</sup> .	4.2	2.8	<sup>3</sup>
	g. Masonry with masonry MMRWF.	6.0	2.8	160
	2. Steel EBF.			
	a. With steel SMRF.	8.5	2.8	N.L.
	b. With steel OMRF (not permitted).	-	-	-
	3. Ordinary braced frames (not permitted).			
5. Cantilevered column building systems	4. Special concentrically braced frames.			
	a. Steel with steel SMRF.	7.5	2.8	N.L.
6. Shear wall-frame interaction system	b. Steel with steel OMRF (not permitted).	-	-	-
	5. Steel IMRG (not permitted).			
7. Undefined systems	1. Cantilevered column elements.	2.2	2.0	35 <sup>7</sup>
	1. Concrete <sup>8</sup> .	5.5	2.8	160
See Sections 1629.6.7 and 1629.9.2.		-	-	-

N.L.—no limit.

<sup>1</sup>See Section 1630.4 for combination of structural systems.

<sup>2</sup>Basic structural systems are defined in Section 1629.6

<sup>3</sup>Prohibited in Seismic Zones 3 and 4.

<sup>4</sup>Includes precast concrete conforming to Section 1921.2.7.

<sup>5</sup>Prohibited in Seismic Zones 3 and 4, except as permitted in Section 1634.2.

<sup>6</sup>In Seismic Zone 4, **Steel IMRF, OMRF and Ordinary Braced Frames** are permitted as follows:

a) **Steel IMRF** are permitted for structural systems 35 feet or less in height and the dead load of the roof, walls or floors not exceeding 35 psf each; or for single-story buildings 60 feet or less in height with the dead load of the roof or walls not exceeding 15 psf each where the moment joints of field connections are constructed of bolted end plates; or single-family dwellings using light-frame construction with R = 3.0 and = 2.2.

b) **Steel OMRF** are permitted for buildings 35 feet or less in height with the dead load of the roof, walls or floors not exceeding 15 psf each; or single-story buildings 60 feet or less in height with the dead load of the roof or walls not exceeding 15 psf each and where the moment joints of field connections are constructed of bolted end plates.

c) **Steel Ordinary Braced Frames** are permitted for structural systems 35' or less in height; or penthouse structures; or single-story buildings 60 feet or less in height with the dead load of the roof or walls not exceeding 15 psf each.

<sup>7</sup>Total height of the building including cantilevered columns.

<sup>8</sup>Prohibited in Seismic Zones 2A, 2B, 3 and 4. See Section 1633.2.7."

**Findings:** The amendment set forth in this part is reasonably necessary because of the following local geological conditions.

1. The San Francisco-San Jose Bay Area region is densely populated and located in an area of high seismic activities as indicated by United States Geological Survey and California Division of Mines and Geology.
2. Recent earthquake activities, including the 1989 Loma Prieta and the 1994 Northridge earthquakes, have indicated the lack of adequate design and detailing as a contributing factor to damages that reduced the protection of the life-safety of building occupants.
3. The amendment allows the use of steel ordinary moment frames and intermediate moment frames with certain limitations on height and dead load.
4. Table 16-N is revised to make it consistent with the adoption of 1997 AISC-Seismic provisions and the latest supplements. These provisions are fundamentally updated from previous editions. It has incorporated, to the extent possible, most recent findings from the FEMA-funded SAC Reports on steel moment frames.

Section 7. Section 8.22 of Article I of Chapter 8 of the Mountain View City Code is added to read as follows:

**"SEC. 8.22. Section 2204—amended.**

Section 2204 of Chapter 22 of the Uniform Building Code is amended to read:

**'Design Methods**

Design shall be by one of the following methods.

**2204.1 Load and Resistance Factor Design.** Steel design based on load and resistance factor design method shall resist the factored load combinations of Section 1612.2 in accordance with the applicable requirements of Section 2205.

**2204.2 Allowable Stress Design.** Steel design based on allowable stress design methods shall resist the factored load combinations of Section 1612.3 in accordance with the applicable requirements of Section 2205."

**Findings:** The amendment set forth in this part is reasonably necessary because of the following local geological conditions.

1. The San Francisco-San Jose Bay Area region is densely populated and located in an area of high seismic activities as indicated by United States Geological Survey and California Division of Mines and Geology.

2. Recent earthquake activities, including the 1989 Loma Prieta and the 1994 Northridge earthquakes, have indicated the lack of adequate design and detailing as a contributing factor to damages that reduced the protection of the life-safety of building occupants.

3. The amendment eliminates references to Divisions II and III of Chapter 22 for seismic design of steel structures. This is necessary since the 1997 AISC-Seismic provisions with Supplements 1 and 2 are adopted in another part of this ordinance as the code for seismic design of such structures.

Section 8. Section 8.24 of Article I of Chapter 8 of the Mountain View City Code is added to read as follows:

**"SEC. 8.24. Section 2205.3—amended.**

Section 2205.3 of Chapter 22 of the Uniform Building Code is amended to read:

**'2205.3 Seismic Design Provisions for Structural Steel.** Steel structural elements that resist seismic forces shall, in addition to the requirements of Section 2205.2, be designed in accordance with Division IV."

**Findings:** The amendment set forth in this part is reasonably necessary because of the following local geological conditions.

1. The San Francisco - San Jose Bay Area region is densely populated and located in an area of high seismic activities as indicated by United States Geological Survey and California Division of Mines and Geology.

2. Recent earthquake activities, including the 1989 Loma Prieta and the 1994 Northridge earthquakes, have indicated the lack of adequate design and detailing as a contributing factor to damages that reduced the protection of the life-safety of building occupants.

3. The current 1997 UBC edition is based on the outdated 1992 AISC-Seismic provisions. The proposal makes the CBC provisions consistent with the current practice, which is based on the 1997 AISC-Seismic with the two subsequent supplements printed afterward.

Section 9. Section 8.25 of Article I of Chapter 8 of the Mountain View City Code is amended to read:

**"SEC. 8.25. Divisions IV and V of Chapter 22 of the California Building Code—Modifications.**

Division IV of Chapter 22 of the California Building Code is deleted and replaced with the following:

Division IV—SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS  
Based on Seismic Provisions for Structural Steel Buildings of the  
American Institute of Steel Construction, Parts I and III, dated April 15, 1997,  
and Supplement No. 2, dated November 10, 2000.

**2210—Adoption**

Except for the modifications as set forth in Sections 2211 and 2212 of this division and the requirements of the Building Code, the seismic design, fabrication and erection of structural steel shall be in accordance with the *Seismic Provisions for Structural Steel Buildings*, April 15, 1997, published by the American Institute of Steel Construction, One East Wacker Drive, Suite 3100, Chicago, Illinois, 60601, as if set out at length herein. The adoption of *Seismic Provisions for Structural Steel Buildings* in this Division, hereinafter referred to as AISC-Seismic, shall include Parts I (LRFD) and III (ASD) and Supplement No. 2 dated November 10, 2000.

Where other codes, standards or specifications are referred to in this specification, they are to be considered as only an indication of an acceptable method or material that can be used with the approval of the building official.

**2211—Design Methods**

When the load combinations from Section 1612.2 for LRFD are used, structural steel buildings shall be designed in accordance with Chapter 22, Division II (AISC-LRFD) and Part I of AISC-Seismic as modified by this Division.

When the load combinations from Section 1612.3 for ASD are used, structural steel buildings shall be designed in accordance with Chapter 22, Division III (AISC-ASD) and Part III of AISC-Seismic as modified by this Division.

**2212—Amendments**

The AISC-Seismic adopted by this Division apply to the seismic design of structural steel members except as modified by this Section.

a. The following terms that appear in AISC-Seismic shall be taken as indicated in the 1997 Uniform Building Code.

<b>AISC-Seismic</b>	<b>1997 Uniform Building Code</b>
Seismic Force Resisting System	Lateral Force Resisting System
Design Earthquake	Design Basis Ground Motion
Load Combinations Eqs. (4-1) and (4-2)	Chapter 16 Eqs. (12-17) and (12-18) respectively
LRFD Specification Section Eqs. (A4-1) through (A4-6)	Chapter 16 Eqs. (12-1) through (12-6) respectively
$\zeta_o Q_E$	$E_m$

b. The text of Section 1 of Part I of the AISC-Seismic provisions is deleted and replaced with the following:

**1. Scope**

These provisions are intended for the design and construction of structural steel members and connections in the seismic force resisting systems in buildings for which the design forces resulting from earthquake motions have been determined on the basis of various levels of energy dissipation in the inelastic range of response. These provisions shall apply to buildings in Seismic Zone 2 with an importance factor, I greater than one, in Seismic Zone 3 and 4 or when required by the Engineer of Record.

These provisions shall be applied in conjunction with Chapter 22, Division 11, hereinafter referred to as the LRFD specification. All members and connections in the lateral force resisting system shall have a design strength as provided in the LRFD specification to resist load combinations 12-1 through 12-6 (in Chapter 16) and shall meet the requirements in these provisions.

Part I includes a glossary, which is specifically applicable to this part and Appendix S.

c. Section 4.1. of Part I, first paragraph of the AISC-Seismic provisions is deleted and replaced as follows:

**4.1 Loads and Load Combinations**

The loads and load combinations shall be those in Section 1612.2 except as modified throughout these provisions.



$E_h$  is the horizontal component of earthquake load  $E$  required in Chapter 16. Where required in these provisions, an amplified horizontal earthquake load  $\Omega_o E_h$  shall be used in lieu of  $E_h$  as given in the load combinations below. The term  $\Omega_o$  is the system overstrength factor as defined in Chapter 16. The additional load combinations using amplified horizontal earthquake load are:

$$1.2D + 0.5L + 0.2S + \Omega_o E_h \quad (4-1)$$

$$0.9D + \Omega_o E_h \quad (4-2)$$

Exception: the load factor on  $L$  in load combination 4-1 shall be equal to 1.0 for garages, areas occupied as places of public assembly and all areas where the live load is greater than 100 psf.

Orthogonal earthquake effects shall be included in the analysis as required in Section 1633.1, except that, when consideration of the load  $\Omega_o E_h$  is required, orthogonal earthquake effects need not be considered.

Division V of Chapter 22 of the California Building Code is hereby deleted."

Section 10. Section 8.26 of Article I of Chapter 8 of the Mountain View City Code is amended to read:

**"SEC. 8.26. Section 1612.2.1 amended—Basic Load Combinations.**

Section 1612.2.1 of Chapter 16 of the Uniform Building Code is amended to read:

**'1612.2.1 Basic Load Combinations.** Where load and resistance factor design (strength design) is used, structures and all portions thereof shall resist the most critical effects from the following combinations of factored loads:

$$1.4D \quad (12-1)$$

$$1.2D + 1.6L + 0.5 (L_r \text{ or } S) \quad (12-2)$$

$$1.2D + 1.6 (L_r \text{ or } S) + (f_1 L \text{ or } 0.8W) \quad (12-3)$$

$$1.2D + 1.3W + (f_1 L + 0.5 (L_r \text{ or } S)) \quad (12-4)$$

$$1.2D + 1.0E + (f_1 L + f_2 S) \quad (12-5)$$

$$0.9D \pm (1.0\rho E_h \text{ or } 1.3W) \quad (12-6)$$

**WHERE:**

$f_1 = 1.0$  for floors in places of public assembly, for live loads in excess of 100 psf (4.9 kN/m<sup>2</sup>), and for garage live load.

$= 0.5$  for other live loads.

$f_2 = 0.7$  for roof configurations (such as saw tooth) that do not shed snow off the structure.

$= 0.2$  for other roof configurations.

**EXCEPTIONS:**

1. Factored load combinations for concrete per Section 1909.2 where load combinations do not include seismic forces.

2. Where other factored load combinations are specifically required by the provisions of this code."

**Findings:** The amendment set forth in this part is reasonably necessary because of the following local geological conditions.

1. The San Francisco-San Jose Bay Area region is densely populated and located in an area of high seismic activities as indicated by United States Geological Survey and California Division of Mines and Geology.

2. Recent earthquake activities, including the 1989 Loma Prieta and the 1994 Northridge earthquakes, have indicated the lack of adequate design and detailing as a contributing factor to damages that reduced the protection of the life-safety of building occupants.

3. To avoid reduction of the vertical seismic component ( $E_v$ ) by the dead load (0.9D) which was not the intent of considering the vertical component in seismic calculations.

4. To delete exception Item 2 regarding the 1.1 factor for seismic design of concrete and masonry. The need for eliminating this factor has been well documented in many engineering and trade journals as well as in SEAOC Blue Book Commentary C101.7.1 (Page 85).

Section 11. Section 8.27 of Article I of Chapter 8 of the Mountain View City Code is amended to read:

**"SEC. 8.27. Section 1630.8.2.2 amended—Detailing Requirements in Seismic Zones 3 and 4.**

Section 1630.8.2.2 of Chapter 16 of the Uniform Building Code is amended to read:

**'1630.8.2.2 Detailing Requirements in Seismic Zones 3 and 4.** In Seismic Zones 3 and 4, elements supporting discontinuous systems shall meet the following detailing or member limitations.

1. Reinforced concrete or reinforced masonry elements designed primarily as axial-load members shall comply with Section 1921.4.4.5.

2. Reinforced concrete elements designed primarily as flexural members and supporting other than light-frame wood shear wall systems or light-frame steel and wood structural panel shear wall systems shall comply with Sections 1921.3.2 and 1921.3.3. Strength computations for portions of slabs designed as supporting elements shall include only those portions of the slab that comply with the requirements of these Sections.

3. Masonry elements designed primarily as axial-load-carrying members shall comply with Sections 2106.1.12.4, Item 1, and 2108.2.6.2.6.

4. Masonry elements designed primarily as flexural members shall comply with Section 2108.2.6.2.5.

5. Steel elements designed primarily as flexural members or trusses shall have bracing for both top and bottom beam flanges or chords at the location of the support of the discontinuous system and shall comply with the requirements of AISC-Seismic Part 1, Section 9.4b.

6. Wood elements designed primarily as flexural members shall be provided with lateral bracing or solid blocking at each end of the element and at the connection location(s) of the discontinuous system."

**Findings:** The amendment set forth in this part is reasonably necessary because of the following local geological conditions.

1. The San Francisco-San Jose Bay Area region is densely populated and located in an area of high seismic activities as indicated by United States Geological Survey and California Division of Mines and Geology.

2. Recent earthquake activities, including the 1989 Loma Prieta and the 1994 Northridge earthquakes, have indicated the lack of adequate design and detailing as a contributing factor to damages that reduced the protection of the life-safety of building occupants.

3. The provision is adopted in AISC-Seismic 97 Part I, Section 8.3, and is applicable to all axial-loaded members; therefore, it is redundant.

4. Old section is no longer applicable. Replaced with provision in the AISC-Seismic.

Section 12. Section 8.28 of Article I of Chapter 8 of the Mountain View City Code is amended to read:

**"SEC. 8.28. Section 1630.10 amended—Calculated Story Drift.**

Section 1630.10 of Chapter 16 of the Uniform Building Code is amended to read:

**'Story Drift Calculated**

**1630.10.2 Calculated.** Calculated story drift using  $M$  shall not exceed 0.025 times the story height for structures having a fundamental period of less than 0.5 second. For structures having a fundamental period of 0.5 second or greater, the calculated story drift shall not exceed  $0.020/T^{1/3}$  times the story height.

**EXCEPTIONS:**

1. These drift limits may be exceeded when it is demonstrated that greater drift can be tolerated by both structural elements and nonstructural elements that could affect life safety. The drift used in this assessment shall be based upon the maximum inelastic response displacement,  $\Delta_M$ .

2. There shall be no drift limit in single-story steel-framed structures classified as Groups B, F and S occupancies or Group H, Division 4 or 5 occupancies. In Groups B, F and S occupancies, the primary use shall be limited to storage, factories or workshops. Minor accessory uses shall be allowed in accordance with the provisions of Section 302. Structures on which this exception is used shall not have equipment attached to the structural frame or shall have such equipment detailed to accommodate the additional drift. Walls that are laterally supported by the steel frame shall be designed to accommodate the drift in accordance with Section 1633.2.4.'

The text of UBC Section 1630.10.3 is deleted and replaced with the following:

**'1630.10.3 Limitations.** The design lateral forces used to determine the calculated drift may disregard the limitations of Formula (30-6) and (30-7) and may be based on the period determined from Formula (30-10) neglecting the 30 or 40 percent limitations of Section 1630.2.2, Item 2.'"

**Findings:** The amendment set forth in this part is reasonably necessary because of the following local geological conditions.

1. The San Francisco-San Jose Bay Area region is densely populated and located in an area of high seismic activities as indicated by United States Geological Survey and California Division of Mines and Geology.

2. Recent earthquake activities, including the 1989 Loma Prieta and the 1994 Northridge earthquakes, have indicated the lack of adequate design and detailing as a contributing factor to damages that reduced the protection of the life-safety of building occupants.

3. The amendment corrects a much significant deficiency in the 1997 UBC, which eliminated any minimum base shear from consideration when checking for building drift.

4. After engineers began using the 1997 UBC, they found problems with applying (30-7) for the drift calculations. (30-7) applies only to Zone 4 and was added after the Northridge earthquake to account for near fault pulses. An erratum to 1997 UBC Section 1630.10.3 was issued in March 2001, three years following publication, that deleted (30-7) from being applied to drift calculations. However, the SEAOC Seismology Committee found that the erratum actually made the drift limit to be less stringent and would allow more slender and flexible buildings than were allowed under the 1994 UBC.

5. The proposed modification was recommended by SEAOC Seismology Committee. It effectively makes the descending branch vary with  $1/T^{2/3}$  for drift coordination purposes and make the drift limitations very similar to those of the 1994 UBC.

6. The change from 0.7 second to 0.5 second in the proposal is needed to avoid a step function in the drift limit. If 0.7 second were retained, the drift limit at T just below 0.7 second would have been different from the drift limit just above 0.7 second. With the switch to 0.5 second, the drift limit just below T=0.5 second is the same as the drift limit just above T=0.5 second.

Section 13. Section 8.29 of Article I of Chapter 8 of the Mountain View City Code is amended to read:

**"SEC. 8.29. Section 2316 amended—Design Specifications for Allowable Stress Design of Wood Buildings**

Section 2316 of Chapter 23 of the Uniform Building Code is deleted and replaced with the following:

**'Part 1—ALLOWABLE STRESS DESIGN OF WOOD**

This standard, with certain exceptions, is the ANSI/NFoPA NDS-01 National Design Specification for Wood Construction of the American Forest and Paper Association, 2001 Edition, and the supplement to the 2001 Edition, National Design Specification, adopted by reference.

The National Design Specification for Wood Construction, 1997 Edition, and supplement are available from the American Forest and Paper Association, 1111 19th Street NW, Eighth Floor, Washington, DC. 20036.

**SECTION 2316—DESIGN SPECIFICATIONS**

**2316.1 Adoption and Scope.** The National Design Specification for Wood Construction, revised 2001 Edition (NDS), which is hereby adopted as a part of this code, shall apply to the design and construction of wood structures using visually

graded lumber, mechanically graded lumber, structural glued laminated timber and timber piles. National Design Specification Appendix Section F, Design for Creep and Critical Deflection Applications; Appendix Section G, Effective Column Length; and Appendix Section J, Solution of Hankinson Formula, are specifically adopted and made a part of this standard. The supplement to the 1997 Edition National Design Specification, Tables 2A, 4A, 4B, 4C, 4D, 4E, 5A, 5B and 5C are specifically adopted and made a part of this standard.

Other codes, standards or specifications referred to in this standard are to be considered as only an indication of an acceptable method or material that can be used with the approval of the building official, except where such other codes, standards or specifications are specifically adopted by this code as primary standards.

#### **2316.2. Modifications.**

- a. Section 12 of Section 2316.2 is deleted and replaced with the following:

**12. Sec. 3.2.3.3. Add to end of paragraph as follows:** Cantilevered portions of beams less than 4 inches (102 mm) in nominal thickness shall not be notched unless the reduced section properties and lumber defects are considered in the design. For effects of notch on shear strength, see Section 3.4.4

- b. Section 14 of Section 2316.2 is deleted.
- c. Section 26 of Section 2316.2 is deleted.
- d. Section 27 of Section 2316 2 is deleted."

**Findings:** The amendment set forth in this part is reasonably necessary because of the following local geological conditions.

1. The San Francisco-San Jose Bay Area region is densely populated and located in an area of high seismic activities as indicated by United States Geological Survey and California Division of Mines and Geology.

2. Recent earthquake activities, including the 1989 Loma Prieta and the 1994 Northridge earthquakes, have indicated the lack of adequate design and detailing as a contributing factor to damages that reduced the protection of the life-safety of building occupants.

3. The 1991 NDS is an outdated specification, which is more than 10 years old. Since the adoption of the 1997 UBC, the NDS has published the 1997 specifications, which incorporate many of the items that were added since publication of 1991 NDS, and it is also in a more user-friendly format.

Section 14. Section 8.30 of Article II of Chapter 8 of the Mountain View City Code is amended to read:

#### **"SEC. 8.30. Uniform Plumbing Code adopted—Short title.**

The Uniform Plumbing Code, 2000 edition, first printing, including Appendices A, B, C, D, H and I, promulgated by the International Association of Plumbing and Mechanical Officials Association, 20001 Walnut Drive South, Walnut, California, 91789-2825, which regulates the installation, alteration, repair, removal, conversion, use and maintenance of plumbing, gas, drainage systems and other similar work and provides for the issuance of permits for doing such work, is adopted and by this reference made a part of this municipal code with the same force and effect as though set out herein in full. One copy of the Uniform Plumbing Code is on file for public

inspection in the building inspection office." (Ord. No. 1.79, 1/8/79; Ord. No. 7.85, 4/30/85; Ord. No. 34.86, 12/9/86; Ord. No. 1.87, 1/13/87; Ord. No. 15.92, 6/9/92; Ord. No. 22.95, 11/28/95; Ord. No. 7.99, 5/25/99.)

Section 15. Section 8.31 of Article II of Chapter 8 of the Mountain View City Code is amended to read:

**"SEC. 8.31. Section 102.3.2 amended—Violation and penalties.**

Section 102.3.2 of Chapter 1 of the Uniform Plumbing Code is amended to read:

'Section 102.3.2. Any person, firm or corporation violating any provision of this Code shall be deemed guilty of a misdemeanor and, upon conviction thereof, shall be punishable as set forth in the city charter. Each separate day or any portion thereof, during which any violation of this Code occurs or continues, shall be deemed to constitute a separate offense and, upon conviction thereof, shall be punishable as herein provided. The issuance or granting of a permit or approval of plans and specifications shall not be deemed or construed to be a permit for, or an approval of, any violation of any of the provisions of this Code. No permit presuming to give authority to violate or cancel the provisions of this Code shall be valid, except insofar as the work or use which it authorized is lawful.'

Section 16. Section 8.34 of Article II of Chapter 8 of the Mountain View City Code is amended to read:

**"SEC. 8.34. Chapter 15—Fire Stop Protection for DWV and Storm Water Applications.**

Chapter 15 of the Uniform Plumbing Code is deleted in its entirety. All references and standards of Chapter 15 shall be replaced by Chapter 7 of the 1997 Uniform Building Code."

Section 17. Section 8.50 of Article III of Chapter 8 of the Mountain View City Code is amended to read:

**"SEC. 8.50. Uniform Mechanical Code adopted—Short title.**

The Uniform Mechanical Code, 2000 edition, first printing, promulgated by the International Association of Plumbing and Mechanical Officials, 20001 Walnut Drive South, Walnut, California, 91789-2825, and International Conference of Building Officials, 5630 South Workman Mill Road, Whittier, California, 90601, including all appendices, which regulates and provides complete requirements for the installation and maintenance of heating, ventilating, comfort cooling and refrigeration systems, is adopted and by reference made a part of this municipal code with the same force and effect as though set out herein in full. One copy of the Uniform Mechanical Code is on file and open to public inspection in the building inspection office." (Ord. No. 1.79, 1/8/79; Ord. No. 7.85, 4/30/85; Ord. No. 34.86, 12/9/86; Ord. No. 1.87, 1/13/87; Ord. No. 24.89, 12/12/89; Ord. No. 15.92, 6/9/92; Ord. No. 7.99, 5/25/99.)

Section 18. Section 8.70 of Article IV of Chapter 8 of the Mountain View City Code is amended to read:

**"SEC. 8.70. National Electrical Code adopted—Short title.**

Except as otherwise provided in this article, the minimum standards, provisions and requirements for the installation, alteration or repair of electrical systems and the inspection thereof in the city shall be in accordance with the provisions and in the manner prescribed by the National Electrical Code, 1999 edition, promulgated by the

National Fire Protection Association and approved by the American National Standards Institute, which electrical code is adopted. One copy of said electrical code is on file and open to public inspection in the building inspection office. Wherever the phrases "uniform electrical code" or "electrical code" are used in this Code or any ordinance of the city, such phrases refer and apply to the National Electrical Code, 1999 edition, as adopted and amended by this article." (Ord. No. 1.79, 1/8/79; Ord. No. 7.85, 4/30/85; Ord. No. 15.92, 6/9/92; Ord. No. 22.95, 11/28/95; Ord. No. 7.99, 5/25/99.)

Section 19. Section 8.71 of Article IV of Chapter 8 of the Mountain View City Code is amended to read:

**"SEC. 8.71. Article 91 amended—Administration.**

Article 91 of the National Electrical Code is amended to read:

**'ARTICLE 91. ADMINISTRATION.**

**91-1. Administrative authority.**

The building official of the city is hereby designated as the administrative authority for purposes of administering this Code. The term "this Code" shall refer to the 1999 edition of the National Electrical Code.

**91-2. Permit required—Violations—Penalties.**

(a) It shall be unlawful for any person to install, remove, alter, repair or replace or cause to be installed, removed, altered, repaired, or replaced any electrical outlet, charge, conduit, circuit, feeder or connection of any type in a building or premises without first obtaining a permit to do such work from the administrative authority.

(b) A separate permit shall be obtained for each building or structure.

(c) No person shall allow any other person to do or cause to be done any work under a permit secured by a Permittee except persons in his or her employ.

(d) Any person, firm, or corporation violating any of the provisions of this Code shall be deemed guilty of a misdemeanor, and each such person shall be deemed guilty of a separate offense for each and every day or portion thereof during which any violation of any of the provisions of this Code is committed, continued, or permitted, and upon conviction of any such violation such person shall be punishable as set forth in the city charter.

**91-3. Fees.** Fees charged by the administrative authority shall be set forth by city council resolution, as amended from time to time.

**91-4. Issuance of permits.** The provisions of Sections 10.2, 10.3, 10.4, 10.5, 20.1, 20.2, 20.6, 20.7, 20.8, 20.9, 10.10, 20.11, 20.12 and 20.13 of Part I of the 2000 edition of the Uniform Plumbing Code, as such Uniform Plumbing Code is adopted by Section 8.30 of Article II of this chapter, are hereby incorporated by reference as if fully set forth at this point. Whenever, in said sections, the terms "plumbing" or "plumbing systems" are used, such terms shall mean "electrical" or "electrical installations," respectively.

**91-5. Expiration.**

Every permit issued by the building official under the provisions of this code shall expire by limitation and become null and void if the building or work

authorized by such permit is not commenced within 180 days from the date of such permit or if the building or work authorized by such permit is suspended or abandoned at any time after the work is commenced for a period of 180 days from the last inspection. Before such work can be recommenced, a new permit shall be first obtained to do so, and the fee therefor shall be one-half the amount required for a new permit for such work, provided no changes have been made or will be made in the original plans and specifications for such work; and provided further that such suspension or abandonment has not exceeded one year from the date of such permit or if the building or work authorized by such permit is suspended or abandoned at any time after the work is commenced for a period of one year from the last inspection. In order to renew action on a permit after expiration, the permittee shall pay a new full permit fee.

Any permittee holding an unexpired permit may apply for an extension of the time within which work may commence under that permit when the permittee is unable to commence work within the time required by this section for good and satisfactory reasons. The building official may extend at no charge the time for action by the permittee for a period not exceeding 180 days on written request by the permittee showing that circumstances beyond the control of the permittee have prevented action from being taken.

The provisions of Sections 101.2, 101.4, 101.5, 102.1, 102.2 and 102.2.5 of the 2000 edition of the Uniform Plumbing Code, as such Uniform Plumbing Code is adopted by Section-8.30 of Article-II of this chapter, are hereby incorporated by reference as if fully set forth at this point. Whenever, in said sections, the terms "plumbing" or "plumbing systems" are used, such terms shall mean "electrical" or "electrical installations," respectively.

**91-6. Adherence to rules and standards for owner participation in downtown revitalization area.**

As to applications for electrical permits authorizing the installation, repair, removal or use of any electrical outlet or system, and other similar work regarding any building or structure located within the "project area" of the duly adopted and amended Revitalization Plan for the downtown Mountain View area, where the value of improvements authorized by such permit exceeds those amounts set forth in paragraph C.1 of the Rules and Standards for Owner Participation adopted by the city council of the city (acting as the Mountain View Revitalization Authority) on September 19, 1977, by Resolution No. 11743, Series 1977, the building official shall not be required to issue any such permit until it has been determined that the owner of the property for which the permit is being obtained has complied or is found to be in compliance with said Rules of Owner Participation and with all applicable provisions of the duly adopted Revitalization Plan.'

**Finding:** This section is needed to conform to the Owner Participation Rules and Standards of the Mountain View Revitalization Authority.

**'91-7. Connection of utility services.**

The provisions of Section 1010 of the Uniform Building Code, as such section is added to said Uniform Building Code by Section 8.7 of Article I of this chapter, are hereby incorporated by reference.'

**Finding:** The 1999 edition of the National Electrical Code contains no requirements regarding unlawful connections of utility services and this new section fills that void.



**'91-8. Procedure for appeal.**

The provisions of Section 105 of the 1997 edition of the Uniform Building Code, as such section is added to said Uniform Building Code by Section 8.5 of Article I of this chapter, are hereby incorporated by reference, as if fully set forth at this point. Whenever the term "building permit" is used in said Section 105, such term shall mean "electrical permit.""

**Finding:** This section provides a procedure for appeals from certain decisions of the administrative authority without the need by the city to incur the costs of any specially created board of appeals. (Ord. No. 1.79, 1/8/79; Ord. No. 7.85, 4/30/85; Ord. No. 15.92, 6/9/92; Ord. No. 22.95, 11/28/95; Ord. No. 7/99, 5/25/99.)

Section 20. The provisions of this ordinance shall be effective thirty (30) days from and after the date of its adoption.

Section 21. If any section, subsection, sentence, clause or phrase of this ordinance is for any reason held to be unconstitutional, such decision shall not affect the validity of the other remaining portions of this ordinance. The City Council hereby declares that it would have passed this ordinance and each section, subsection, sentence, clause or phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases be declared unconstitutional.

Section 22. Pursuant to Section 522 of the Mountain View City Charter, it is ordered that copies of the foregoing proposed ordinance be posted at least two (2) days prior to its adoption in three (3) prominent places in the City and that a single publication be made to the official newspaper of the City of a notice setting forth the title of the ordinance, the date of its introduction, and a list of the places where copies of the proposed ordinance are posted.

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The foregoing ordinance was regularly introduced at the Special Meeting of the City Council of the City of Mountain View, duly held on the 10th day of September, 2002, and thereafter adopted at the Special Meeting of said Council, duly held on the 24th day of September, 2002, by the following roll call vote:

AYES: Councilmembers Kasperzak, Pear, Stasek, Zoglin and Mayor Lieber

NOES: None

ABSENT: Councilmember Faravelli

NOT VOTING: None

ATTEST:

APPROVED:

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ANGELITA M. SALVADOR  
CITY CLERK

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SALLY J. LIEBER  
MAYOR

I do hereby certify that the foregoing ordinance was passed and adopted by the City Council of the City of Mountain View at a Special Meeting held on the 24th day of September, 2002, by the foregoing vote, and was published in the *San Jose Post Record* by reference on the

20th day of September, 2002, and posted in three prominent places in said City.

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City Clerk  
City of Mountain View

RG/8/ORD/884-09-10-02o-1^